

CLAIMS

1. A communication apparatus which has IP (Internet Protocol) communication means and transmits/receives communication data to/from a 5 communication partner station discriminated by a telephone number, comprising:

IP address obtaining means for obtaining an IP address of the communication partner station from a predetermined server based on the telephone number of 10 the communication partner station; and

control means for transmitting/receiving on an IP network the communication data to/from the communication partner station by using the obtained IP address of the communication partner station, 15 based on a predetermined data transmission/reception protocol.

2. A communication apparatus according to Claim 1, wherein the predetermined server is an SIP (Session Initiation Protocol) proxy server, and said 20 IP address obtaining means obtains the IP address of the communication partner station from said SIP proxy server based on an SIP protocol.

3. A communication apparatus according to Claim 1, further comprising:

25 facsimile signal communication means for performing communication of a facsimile signal; and

VoIP (Voice over Internet Protocol)

communication means for transmitting/receiving a frame obtained by digitally encoding the facsimile signal output from said facsimile signal communication means and adding the IP address.

5 4. A communication apparatus according to Claim 3, wherein facsimile communication is performed with the communication partner station through an ADSL (Asymmetric Digital Subscriber Line) gateway for connecting bands obtained by frequency-dividing ADSL 10 with a splitter respectively to the IP network and a line switching network, the IP network, and a facsimile gateway for receiving the digitally converted facsimile signal from the IP network and transmitting the received signal to the communication 15 partner station through the line switching network.

5. A communication apparatus according to Claim 3, wherein
said IP address obtaining means judges by
analyzing the telephone number of the communication
20 partner whether or not the communication with the
communication partner station through a VoIP
transmission path is possible, and
when it is judged that the communication with
the communication partner station through the VoIP
25 transmission path is possible, said IP address
obtaining means attempts to obtain the IP address of
the communication partner station from the

predetermined server, and said control means transmits/receives on the IP network the communication data to/from the communication partner station by using the obtained IP address of the

5 communication partner station, based on the predetermined data transmission/reception protocol.

6. A communication apparatus according to Claim 1, wherein it is controlled by said control means to obtain the IP address of the communication partner station from the predetermined server based on the telephone number of the communication partner station by using a predetermined UDP (User Datagram Protocol), and further transmit/receive the communication data to/from the communication partner station by using

10 the obtained IP address of the communication partner station on the basis of a predetermined TCP (Transmission Control Protocol).

7. A communication apparatus according to Claim 3, further comprising data communication means for

20 performing the data communication by using a data transmission/reception protocol which is not a VoIP procedure signal used by said VoIP communication means and a facsimile procedure signal used by said facsimile signal communication means,

25 wherein said control means performs image communication by selectively using said VoIP communication means and said data communication means.

8. A communication apparatus according to Claim 3, wherein said VoIP communication means is a VoIP codec for converting an analog voice signal into a digital signal.

5 9. A communication system which includes a communication apparatus having IP (Internet Protocol) communication means and transmitting/receiving communication data to/from a communication partner station discriminated by a telephone number,
10 comprising:

IP address obtaining means for obtaining an IP address of the communication partner station from a predetermined server based on the telephone number of the communication partner station; and

15 control means for transmitting/receiving on an IP network the communication data to/from the communication partner station by using the obtained IP address of the communication partner station, based on a predetermined data transmission/reception
20 protocol,

wherein the communication partner station is a facsimile gateway, and the facsimile gateway transfers image data received from said communication apparatus according to a non-facsimile procedure to a
25 destination communication apparatus according to a facsimile procedure.

10. A control method of a communication

apparatus having an IP communication means and transmitting/receiving communication data to/from a communication partner station discriminated by a telephone number, said method comprising:

- 5 an IP address obtaining step of obtaining an IP address of the communication partner station from a predetermined server based on the telephone number of the communication partner station; and
 a control step of transmitting/receiving on an IP network the communication data to/from the communication partner station by using the obtained IP address of the communication partner station, based on a predetermined data transmission/reception protocol.
- 10 11. A control method according to Claim 10, wherein the predetermined server is an SIP proxy server, and the IP address of the communication partner station is obtained from the SIP proxy server based on an SIP protocol.
- 15 12. A control method according to Claim 10, further comprising:
 a facsimile signal communication step of performing communication of a facsimile signal; and
 a VoIP communication step of
25 transmitting/receiving a frame obtained by digitally encoding the facsimile signal output in said facsimile signal communication step and adding the IP

address.

13. A control method according to Claim 12, wherein the communication apparatus performs facsimile communication with the communication partner station through an ADSL gateway for connecting bands obtained by frequency-dividing ADSL with a splitter respectively to the IP network and a line switching network, the IP network, and a facsimile gateway for receiving the digitally converted facsimile signal from the IP network and transmitting the received signal to the communication partner station through the line switching network.

14. A control method according to Claim 12, wherein

15 it is judged in said IP address obtaining step by analyzing the telephone number of the communication partner whether or not the communication with the communication partner station through a VoIP transmission path is possible, and

20 when it is judged that the communication with the communication partner station through the VoIP transmission path is possible, said IP address obtaining step attempts to obtain the IP address of the communication partner station from the predetermined server, and said control step

25 transmits/receives on the IP network the communication data to/from the communication partner

station by using the obtained IP address of the communication partner station, based on the predetermined data transmission/reception protocol.

15. A control method according to Claim 10,
5 wherein it is controlled in said control step to obtain the IP address of the communication partner station from the predetermined server based on the telephone number of the communication partner station by using a predetermined UDP, and further
10 transmit/receive the communication data to/from the communication partner station by using the obtained IP address of the communication partner station on the basis of a predetermined TCP.

16. A control method according to Claim 12,
15 further comprising a data communication step of performing the data communication by using a data transmission/reception protocol which is not a VoIP procedure signal used in said VoIP communication step and a facsimile procedure signal used in said
20 facsimile signal communication step,
wherein said control step performs image communication by selectively using said VoIP communication step and said data communication step.

17. A control method according to Claim 12,
25 wherein said VoIP communication step uses a VoIP codec for converting an analog voice signal into a digital signal.

18. A control method according to Claim 10,
wherein the communication partner station is a
facsimile gateway, and the facsimile gateway
transfers image data received from the communication
5 apparatus according to a non-facsimile procedure to a
destination communication apparatus according to a
facsimile procedure.

19. A control program for a communication
apparatus having an IP communication means and
10 transmitting/receiving communication data to/from a
communication partner station discriminated by a
telephone number, said method comprising:
an IP address obtaining step of obtaining an IP
address of the communication partner station from a
15 predetermined server based on the telephone number of
the communication partner station; and

16. a control step of transmitting/receiving on an
IP network the communication data to/from the
communication partner station by using the obtained
20 IP address of the communication partner station,
based on a predetermined data transmission/reception
protocol.

21. A control program according to Claim 19,
wherein the predetermined server is an SIP proxy
25 server, and the IP address of the communication
partner station is obtained from the SIP proxy server
based on an SIP protocol.

21. A control program according to Claim 19, further comprising:

a facsimile signal communication step of performing communication of a facsimile signal; and

5 a VoIP communication step of transmitting/receiving a frame obtained by digitally encoding the facsimile signal output in said facsimile signal communication step and adding the IP address.

10 22. A control program according to Claim 21, wherein the communication apparatus performs facsimile communication with the communication partner station through an ADSL gateway for connecting bands obtained by frequency-dividing ADSL 15 with a splitter respectively to the IP network and a line switching network, the IP network, and a facsimile gateway for receiving the digitally converted facsimile signal from the IP network and transmitting the received signal to the communication 20 partner station through the line switching network.

23. A control program according to Claim 21, wherein

it is judged in said IP address obtaining step by analyzing the telephone number of the 25 communication partner whether or not the communication with the communication partner station through a VoIP transmission path is possible, and

when it is judged that the communication with the communication partner station through the VoIP transmission path is possible, said IP address obtaining step attempts to obtain the IP address of 5 the communication partner station from the predetermined server, and said control step transmits/receives on the IP network the communication data to/from the communication partner station by using the obtained IP address of the 10 communication partner station, based on the predetermined data transmission/reception protocol.

24. A control program according to Claim 21, wherein it is controlled in said control step to obtain the IP address of the communication partner 15 station from the predetermined server based on the telephone number of the communication partner station by using a predetermined UDP, and further transmit/receive the communication data to/from the communication partner station by using the obtained 20 IP address of the communication partner station on the basis of a predetermined TCP.

25. A control program according to Claim 21, further comprising a data communication step of performing the data communication by using a data 25 transmission/reception protocol which is not a VoIP procedure signal used in said VoIP communication step and a facsimile procedure signal used in said

facsimile signal communication step,

wherein said control step performs image communication by selectively using said VoIP communication step and said data communication step.

5 26. A control program according to Claim 21, wherein said VoIP communication step uses a VoIP codec for converting an analog voice signal into a digital signal.

10 27. A gateway apparatus which includes IP communication means, transmits/receives communication data to/from a first partner station, and transmits/receives communication data to/from a second partner station according to a facsimile procedure, comprising:

15 obtaining means for obtaining a telephone number of the second partner station or an IP address of the first partner station on the basis of an SIP; and

20 control means for connecting, by using the obtained telephone number of the second partner station or the obtained IP address of the first partner station, the corresponding partner station, and transmitting/receiving the communication data to/from the corresponding partner station on the 25 basis of a facsimile protocol.

28. A control method of a gateway apparatus including an IP communication means,

transmitting/receiving communication data to/from a first partner station by using the IP communication means, and transmitting/receiving communication data to/from a second partner station according to a

5 facsimile procedure by using the IP communication means, said method comprising:

an obtaining step of obtaining a telephone number of the second partner station or an IP address of the first partner station on the basis of an SIP;

10 and

a control step of connecting, by using the telephone number of the second partner station or the IP address of the first partner station obtained in said obtaining step, the corresponding partner

15 station, and transmitting/receiving the communication data to/from the corresponding partner station on the basis of a facsimile protocol.

29. A control program of a gateway apparatus including an IP communication means,

20 transmitting/receiving communication data to/from a first partner station by using the IP communication means, and transmitting/receiving communication data to/from a second partner station according to a facsimile procedure by using the IP communication

25 means, said program consisting of:

an obtaining step of obtaining a telephone number of the second partner station or an IP address

of the first partner station on the basis of an SIP;
and

a control step of connecting, by using the
telephone number of the second partner station or the

5 IP address of the first partner station obtained in
said obtaining step, the corresponding partner
station, and transmitting/receiving the communication
data to/from the corresponding partner station on the
basis of a facsimile protocol.

10 30. A communication method of, by using an IP
communication means, transmitting/receiving
communication data to/from a first partner station,
and transmitting/receiving communication data to/from
a second partner station according to a facsimile
15 procedure, said method comprising:

an obtaining step of obtaining a telephone
number of the second partner station or an IP address
of the first partner station on the basis of an SIP;
and

20 a control step of connecting, by using the
telephone number of the second partner station or the
IP address of the first partner station obtained in
said obtaining step, the corresponding partner
station, and transmitting/receiving the communication
25 data to/from the corresponding partner station on the
basis of a facsimile protocol.